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CANNING ATLANTIC AND GULF OYSTERS[1/]

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Commercial canning of oysters was first done on Chesapeake Bay; and for many years probably 90 percent of the pack came from that locality. With the increased demand for fresh oysters and consequent depletion of the oyster beds, the canning industry moved south. The Gulf of Mexico is now the principal district, producing about three-fifths of the total pack for the United States. At present, more oysters are canned in Mississippi than in any other State, although production in the State of Washington is a close second.

The oyster industry of the Atlantic and Gulf coasts is based on a single species, Ostrea virginica. This oyster grows on reefs and other hard bottoms in from 10 to 180 feet of water, and even in shallower parts of the Gulf. It will grow also in bayous or on flats if transplanted and shells supplied to which the spawn may become attached. Over exploitation, oyster drills, and other pests, and industrial pollution, are the principal obstacles to a sustained supply.

Oysters are gathered for canning by tonging and dredging. Tonging is the method usually employed in shallow waters along shore where oysters are found in small and scattered beds, or in areas where it may be required as a conservation measure. Tongs are long-handled scissor-shaped tools with toothed iron baskets fitting together at the tips. The handles may vary in length from 12 to 20 feet, according to the depth of water in which the tongs are used. When the tonger is over a patch of oysters, he grapples the bottom until a cluster of oysters has been gathered into the basket; then, lifts the tongs and shakes the oysters out into the bottom of the boat.

The oyster dredge may best be described as a harrow with a single toothed bar, above which is a triangular iron frame to which a bag of chain or heavy rope netting is attached. It is dragged over the

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1/ This leaflet supersedes Memorandum S-31 issued by the former Bureau of Fisheries.

bottom at the end of a tow line and the toothed bar scrapes the oysters loose from the bottom. As the dredge is towed forward, the loosened oysters are carried back into the bag. When the dredge is full it is lifted to the surface by a winch.

The season during which oysters are gathered for canning depends on the condition of the oysters, the weather, the demand, and legal restrictions. As a rule the season runs from about January 1 to May 1, but the dates may be altered by state fishery agencies.

The catch is culled or sorted when it is brought aboard the boat. The clusters are broken up, old shells discarded, and undersized oysters returned to the beds. As the oysters are purchased by volume, canners insist that as much as possible of the mud be removed. Also, muddy oysters have a disagreeable flavor when canned. On short trips of a day or less the oysters are left on deck; but if the dredger is to be out several days, they are stowed in the hold.

The method of unloading has not changed since early times. A bucket hoist is used for lifting the oysters from the boats to the canneries. The bucket, a heavy metal tub, is hoisted by block and tackle attached to a swinging boom. The buckets of oysters are unloaded directly into cars, which are strapiron crates usually about 8 feet long by 28 inches wide and 19 inches deep mounted on wheels. The oysters may be sprayed with water from a hose after they are loaded in the cars; or, in a few instances, packers have installed a mechanical washer.

Loaded oyster cars are run along rails into the steam box, a rectangular horizontal retort of sheet iron with doors at each end. The steam chests have capacities of 3, 4, or 5 cars. The doors are usually fitted with wooden gaskets, which permit, after being used a short time, considerable steam to leak out. The oysters are steamed from 10 to 15 minutes at 240° F. (12-lb. pressure), the length of time depending on the initial temperature, the steam supply and, to some extent, the size and condition of the oysters. Some canneries steam from 6 to 10 minutes at 250° F. (15-lb. pressure). The periods given do not include the "come up", or "blow down", periods which are usually 6 to 8 minutes and 1 minute, respectively.

The cars of steamed oysters are rolled into a shucking room. The oysters are shucked directly from the cars into small perforated cans holding from 8 to 10 pounds, the shuckers using a dull-edged knife with a small thick blade. The shells are dropped on the floor to be shoveled later into wheelbarrows for removal.

The filled pails of meats are inspected to determine the presence of pieces of shell, torn meats, or other evidences of careless workmanship. They are then emptied into a galvanized flume through which they

are conveyed by cold running water. Grit and shell particles are washed from the meats and are trapped by baffles at intervals in the flume. The meats are collected at the mouth of the flume, and emptied into a tank of light salt brine where they are washed from 20 to 30 minutes, after which they are removed by dip nets and transferred to screen-bottomed metal trays. There they are left to drain from 10 to 20 minutes.

The trays of drained meats are taken to packing tables where the cans are nearly filled with meats. The cans are then weighed and the content of each adjusted to the correct weight. This is somewhat less (about 90 percent) than the drained weight 1/ because the oyster meats absorb liquid during processing and subsequent storage.

As the filled cans are conveyed to the can-closing machines, they are filled with hot 1 percent brine from a perforated-pipe spray. In some canneries, a 35 grain salt tablet is dropped in each can which is then filled with hot water. This is done to overcome the waste of salt when the sprayer is used. The cans are sealed immediately after filling.

They are then placed in heating retorts as soon as possible; for if the lapse of time between sealing and processing is too great, the canned product will deteriorate. No. 1 picnic (eastern oyster) cans are processed for 18 minutes at 240° F., or 13 to 14 minutes at 250° F. No. 2 cans are processed 19 minutes at 240° F., or 15 minutes at 250° F. Research laboratories of the canning industry recommend processing at 250° F. in preference to 240° F. The cans are water cooled for about 10 minutes, then dried and stored for a few days before labeling.

Approximately 70 percent of the pack consists of No. 1 eastern oyster (211 x 400) cans. Most of the balance is packed in No. 2 cans. The yield is estimated at 18 to 20 and 12 to 14 No. 1 eastern oyster cans, 5 oz. and 7.5 oz. drained weight, respectively, per barrel of oysters. 2/ The standard case consists of 48 cans of this size and fill. Practically all oysters canned in the Gulf are classed as standards, though some selects are packed.

Amendment No. 1 to Maximum Price Regulation No. 328 (Canned Eastern and Gulf Oysters), effective March 23, 1943, established processer ceilings on canned oysters produced in the southeast Atlantic and Gulf of Mexico areas at $3.35 per dozen, on No. 1 picnic sizes, and $6.25 per dozen on No. 2 picnic sizes.

1/ As a result of the shortage of tin plate brought about by the War, oyster packers have been required to increase the drained weights of No. 1 Eastern Oyster cans from 5 oz. to 7.5 oz., and that of No. 2 cans from 10 oz. to 14 oz. The former fill-in weights were 4-1/2 oz. and 9 oz., respectively, while fill-in weights of 6-3/4 oz. and 12-3/4 oz. are now required for the two can sizes.

2/ The capacity of a barrel varies considerably, since each of the producing states has established by law the measure most favored in that locality. The capacities of state oyster barrels in the principal canning states are as follows: Alabama and Mississippi, 8478.6 cu. in.; Louisiana, 6445.4 cu. in.; and Texas, 8100 cu. in.